

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-32. (Canceled)

33. (Currently Amended) A method of manufacturing pneumatic tyres for vehicle wheels, comprising:

building at least one carcass structure on a toroidal support having an outer surface that substantially matches an inner surface of the tyre, said carcass structure comprising a radially internal layer containing elastomer material in contact with the outer surface of the toroidal support and at least one carcass ply the ends of which are associated with at least one bead structure comprising at least one annular reinforcing structure and an elastomer filler;

closing the toroidal support and the tyre being processed therewith into a hermetically sealed cavity without a vulcanization mould;

admitting a working fluid into said cavity to press the inner surface of said tyre being processed against the outer surface of said toroidal support;

supplying heat to said tyre being processed to start vulcanisation of at least one elastomer element of the carcass structure selected from said elastomer filler and said radially internal layer;

extracting said toroidal support and said tyre being processed from said cavity;

completing building of the tyre being processed;

closing the built tyre and the toroidal support within a moulding cavity defined in a vulcanisation mould, said moulding cavity having walls conforming in shape to an outer surface of the tyre when vulcanisation has been completed; moulding the tyre by pressing it with its outer surface against the walls of the moulding cavity; and supplying heat to the built tyre to vulcanise the tyre.

34. (Previously Presented) The method as claimed in claim 33, wherein said tyre being processed comprises a belt structure associated with said carcass structure.

35. (Previously Presented) The method as claimed in claim 33, wherein said step of admitting said working fluid comes before said step of supplying heat to said tyre being processed.

36. (Withdrawn) The method as claimed in claim 33, wherein said step of admitting said working fluid takes place substantially concurrently with said step of supplying heat to said tyre being processed.

37. (Previously Presented) The method as claimed in claim 33, wherein said step of supplying heat takes place by heat generation on the surface of said toroidal support.

38. (Previously Presented) The method as claimed in claim 33, wherein said step of supplying heat takes place by heat generation at the inside of said tyre being processed.

39. (Previously Presented) The method as claimed in claim 37, wherein said heat generation occurs by magnetic induction over a period of time of about one minute to about six minutes.

40. (Previously Presented) The method as claimed in claim 37, wherein pressure generated by said fluid in said hermetically sealed cavity is about 5 to 15 bars.

Claims 41-64. (Cancelled)

65. (New) A method of manufacturing pneumatic tyres for vehicle wheels, comprising:

building at least one carcass structure on a toroidal support having an outer surface that substantially matches an inner surface of the tyre, said carcass structure comprising a radially internal layer containing elastomer material in contact with the outer surface of the toroidal support and at least one carcass ply the ends of which are associated with at least one bead structure comprising at least one annular reinforcing structure and an elastomer filler;

closing the toroidal support and the tyre being processed therewith into a hermetically sealed cavity;

admitting a working fluid into said cavity to press the inner surface of said tyre being processed against the outer surface of said toroidal support;

supplying heat to said tyre being processed to start vulcanisation of at least one elastomer element of the carcass structure selected from said elastomer filler and said radially internal layer;

deactivating the supply of heat to the tyre while the toroidal support and tyre remain closed in the hermetically sealed cavity and then extracting said toroidal support and said tyre being processed from said cavity;

completing building of the tyre while the toroidal support continues to transfer heat to the radially innermost layers of the tyre, despite having deactivated the supply of heat;

closing the built tyre and the toroidal support within a moulding cavity defined in a vulcanisation mould, said moulding cavity having walls conforming in shape to an outer surface of the tyre when vulcanisation has been completed;

moulding the tyre by pressing it with its outer surface against the walls of the moulding cavity; and

supplying heat to the built tyre to vulcanise the tyre.